Patent claims

1. A process for the regeneration of a supported or unsupported suspension catalyst based on at least one platinum group metal, comprising dissolution of the platinum group metals present in aqueous HCl, using an oxidising agent for platinum group metals, filtration of insoluble constituents and precipitation of the platinum group metals by means of a reducing agent at a pH in the range from 2 to 10,
characterised in that
precipitation is carried out in the presence of a chelating agent for one or more metals from the series of metals of groups 2a, 3a, 4a of the periodic system and transition elements.

2. A process according to claim 1,
characterised in that
an unsupported catalyst based on at least 50 wt.% of palladium, 0 to less than 50 wt.% of one or more other platinum group metals and 0.001 % to 10 wt.% of at least one metal capable of forming complexes from the series of groups 2a, 3a, 4a of the periodic system and transition elements without elements of the platinum group is regenerated by carrying out precipitation in the presence of an at least stoichiometric amount of a chelating agent and moreover at least one of the non-platinum group metals present.

3. A process according to claim 1 or 2,
characterised in that
the oxidising agent used is chlorine or hydrogen peroxide and the reducing agent used is an aldehyde, particularly formaldehyde, a formate or formic acid, a hydride or hydrogen.

4. A process according to one of claims 1 to 3,
characterised in that

a chelating agent from the series comprising aminopolycarboxylic acids, polyhydroxycarboxylic acids, aminopolyphosphonic acids is used.

5. A process according to claim 4, characterised in that a chelating agent from the series comprising iminodiacetic acid, nitrilotriacetic acid, ethylenediamine tetraacetic acid, diethylenetriamine pentaacetic acid, amino-tri(methylenephosphonic acid), ethylenediamine tetra(methylenephosphonic acid), diethlyenetriamine penta(methylenephosphonic acid), hydroxymethane diphosphonic acid, tartaric acid, citric acid, polyoxycarboxylic acids (POC) and water-soluble salts of the acids mentioned are used.

6. A process according to one of claims 1 to 5, characterised in that precipitation of the platinum group metal(s) is carried out with a reducing agent from the series comprising formaldehyde, formate or formic acid, the pH being raised continuously or in stages from 2 to 3 to 8 to 9 during the addition of the reducing agent.